

REMARKS

Claims 1-25 are pending. Claims 3, 9, 15 and 20 have been cancelled. Claims 1, 4-7, 11-14, 16-19 and 22-25 have been amended.

Claims 1, 7, 14 and 19 have been amended to clarify that the local kerf area and a first continuous non-densifying structure laterally surrounds a product (paragraphs [0061] and [0063]) and that the external kerf area laterally surrounds an outer perimeter of said local peripheral kerf area (see FIGs. 1A, 2A, 3A, 4A, 5A).

Claim 1 has been and further amended to incorporate the limitations of claim 3. Similarly, claim 7 has been amended to incorporate the limitations of claim 9, claim 14 has been amended to incorporate the limitations of claim 15 and claim 19 has been amended to incorporate the limitations of claim 20. Accordingly, claims 3, 9, 15 and 20 have been cancelled. Claims 4-6 have been amended to depend from claim 1. Claims 11-13 have been amended to depend from claim 7. Claims 16-18 have been amended to depend from claim 14. Claims 22-24 have been amended to depend from claim 19.

Claim 25 has been amended to clarify that the at least one first continuous non-densifying structure further comprises tailored shapes to control local distortion within the multilayer ceramic laminate. Support is provided for example in claim 10 and with reference to FIGs. 3A, 4A and 5A. No new matter has been added.

Claim 25 stands rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. The Office Action alleges it is unclear as to how the multilayer ceramic laminate of claim 14 further comprises discrete tailored shapes, or how a ceramic structure comprising tailored shapes can control distortion within the laminate. Applicants have amended claim 25 to clarify that the at least one first continuous non-densifying structure further comprises tailored shapes to control local distortion within the multilayer ceramic laminate, which Applicants submit overcomes the rejection, and respectfully request that the rejection be reconsidered and withdrawn.

Claims 1-2 and 7 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Lee et al. (US 2003/0168150 A1) in view of Cassidy et al. (US 6,221,193).

Claims 3, 4-6, 8-25 stand rejected under U.S.C. §103(a) as being allegedly unpatentable over Lee et al. (US 2003/0168150 A1) in view of Cassidy et al. (US 6,221,193) as applied to claims 1, 4, and 7 above, and further in view of Natarajan et al. (US 6,627,020).

Applicants respectfully request reconsideration of the objections and rejections in the Office Action dated June 17, 2009, based upon the following.

As understood, Lee et al. disclose a constrain layer comprising windows in positions complying with the heterogeneous materials and/or conductors, resistors, capacitors and the like printed and/or disposed on the dielectric layer and the green ceramic body (Abstract). As understood, Cassidy et al. disclose a method for reducing screening defects on ceramic greensheets which includes placing additional vias in the kerf that will eventually be discarded during the sizing operation (Abstract). Natarajan et al. disclose a method to control the post sinter distortion of free sintered multilayer ceramic substrates by placing a discrete non-densifying structure in the green ceramic laminate prior to sintering (Abstract). Natarajan et al. further disclose a first discrete non-densifying structure 11 placed on the ceramic greensheet 42 within the product area of the individual product samples 60, and a second discrete non-densifying structure 12 placed in the kerf area 50 (col. 8, lines 61-67). However, Lee et al. in view of Cassidy et al. and Natarajan et al. fail to teach or suggest each and every aspect of Applicants' claimed invention.

The combination of the teachings and suggestions of Lee, Cassidy and Natarajan would not lead one of ordinary skill in the art to arrive at Applicants' claimed invention. In particular, the combined teachings of Lee, Cassidy and Natarajan fail to teach or suggest a local peripheral kerf area surrounding a product, and a peripheral external kerf area that laterally surrounds an outer perimeter of the local peripheral kerf area, where the first continuous non-densifying structure is placed on the local peripheral kerf area to surround the product, and the second continuous non-densifying structure is placed on the peripheral external kerf area.

The Office Action argues that Lee teaches placing a constrain layer on the bottom of the ceramic body, which is equivalent to the claimed second non-densifying structure. However, the second continuous non-densifying structure of Applicants' invention is placed on the peripheral external kerf area which laterally surrounds the local peripheral kerf area, which is not equivalent to a non-densifying structure at the bottom of the ceramic body.

The Office Action argues that Natarajan teaches the step of separating the second at least one non-densifying structure from the multi-up green ceramic laminate prior to sintering. However, Natarajan fails to teach a first continuous non-densifying structure in a local peripheral kerf area that surrounds a product. Rather, Natarajan teaches a first discrete non-densifying structure within the product area. Natarajan also fails to teach or suggest a second continuous non-densifying structure in a peripheral external kerf area. Rather, Natarajan merely teaches a discrete non-densifying structure in a (single) kerf area.

Therefore, Applicants respectfully request that the rejections be reconsidered and withdrawn.

CONCLUSION

In view of the foregoing, Applicants submit that claims 1, 2, 4-8, 10-14, 16-19, and 21-25 are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time. The Commissioner is authorized to charge any additional fees due or credit overpayments to Deposit Account No. 09-0458.

Correspondence for this case should continue to be sent to:

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